

A New Species of *Bubaces* DISTANT (Heteroptera, Rhyparochromidae, Rhyparochrominae)¹

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Abstract: *Bubaces heissi* nov.sp., from Panama, is described. A dorsal view of the holotype and figures of the male and female genitalia and scent glands are included.

Key words: *Bubaces heissi* nov.sp., Lethaeini, Lygaeoidea, Panama, Rhyparochromidae, sexual dimorphism.

Introduction

Bubaces was described by DISTANT (1893), who included the single species *Bubaces castaneus*, known at that time only from Mexico. SCUDDER (1957) placed the genus in the Lethaeini. Subsequently, SCUDDER (1967) transferred *Rhaptus uhleri* DISTANT 1901, a West Indian species that had been placed in the genus *Xestocoris* by BERGROTH (1916), to *Bubaces*. BRAILOVSKY (1981) described two additional species, *Bubaces convergens* from Mexico and Venezuela, and *B. enatus* from Argentina, and added Brazil and Argentina to the range of *B. castaneus*. Most recently, BARANOWSKI & SLATER (2005) provided a key to the two West Indian species and discussed their biology and distribution.

Bubaces is easy to recognize among Neotropical lethaeines. It is one of only three genera with a completely shining dorsal surface, the others being *Esuris* STÅL and *Xestocoris* VAN DUZEE. (Both *Cistalia* and *Paragonatas* have species that are partly shining dorsally.) *Esuris* has a single median iridescent spot basally on the top of the head (O'DONNELL 1986) (Note: O'DONNELL (1991a) states that *Esuris* has two iridescent spots on top of the head; this is incorrect.), whereas both *Bubaces* and *Xestocoris* have

two iridescent spots, one on either side of the midline. The fine structure of the double spot in these genera is very different, however; in *Xestocoris* the spots are made up of fields of overlapping pegs (O'DONNELL 1986), whereas in *Bubaces* each of the spots consists of a series of parallel ridges (O'DONNELL 1986, 1991a), oriented parallel to the anterior margin of the pronotum, as they are in *Lethaeus* (SLATER & O'DONNELL 1978). This difference is visible under high magnification of a light microscope, but is more readily seen with scanning electron microscopy.

In addition, species of *Bubaces* have the following characteristics (O'DONNELL 1986; BARANOWSKI & SLATER 2005): head with an elongate labium (except *B. enatus* BRAILOVSKY); first antennal segment broadening abruptly and extending well beyond tylus; fore femur not incrassate, with only one short, stout subdistal spine; pronotal trichobothrium removed from the anterolateral corner of the pronotum, placed instead on lateral margin about 1/3 to 1/2 along the length of the anterior lobe; and a sexually dimorphic scent gland peritreme, which is long and curving in the male and much shorter in the female. The dorsal and ventral body surfaces are often clothed with long upstanding hairs, but because the bugs

¹This paper is dedicated to Dr. Ernst Heiss, in recognition of his significant contributions to the study of the Heteroptera.

Fig. 1: Dorsal view, holotype *Bubaces heissi* nov.sp., Total length 5 mm.



are most often collected at lights or in light traps, these hairs are usually rubbed off.

It is with great pleasure that I add another species to the genus, and name it after Dr. Ernst Heiss, distinguished heteropterist, on the occasion of his 70th birthday.

Material and Methods

Specimens from the following collections were examined (museum acronyms are given in parentheses): American Museum of Natural History (AMNH); National Museum of Natural History, Smithsonian Institution (NMNH); University of Connecticut (UCMS). Terminology and dissection methods follow O'DONNELL (1991b).

All measurements are in millimeters.

Results

Bubaces heissi nov.sp. (Figs 1-6)

Body elongate; total body length 5.00; maximum width, at level of apex of clavus, 1.70. Dorsal surface strongly shining. General coloration chestnut, including antennae and legs, with tarsi paler. Humeri, later-

al corial margins (partly) and prominent circular subapical corial spot cream color. Venter shining chestnut; labium buff yellow.

Head declivent, sparsely punctate; vertex slightly convex; eyes large, protuberant. Length head 0.80; preocular length 0.48. Width head 0.90; interocular distance 0.45. Antennae with first segment exceeding tylus by more than half its length; antennal segments II-IV terete (left antenna is oligomeric). All segments clothed with decumbent pubescence. Length antennal segment I 0.80; II 1.03; III 0.85; IV 0.88. Venter of head punctate but only slightly swollen. Labium reaching base of fourth abdominal segment; first segment slightly exceeding base of head. Length labial segment I 0.90; II 0.88; III 0.78; IV 0.55.

Thorax with pronotum divided into anterior and posterior lobes; anterolateral trichobothrium set well behind level of anterior margin. Anterior pronotal margin concave, with prominent, punctate collar set off from remainder of pronotum by an incised groove; collar broadening slightly mesally. Lateral pronotal margins calloused, slightly sinuate, with prominent humeri. Anterior pronotal lobe with calli nearly flat, impunctate, confluent across meson; transverse impression shallow, obsolete mesally. Posterior pronotal lobe evenly punctate. Length pronotum 1.03; width across humeri 1.55; width across collar 0.53. Scutellum punctate mesally and laterally, with V-shaped, impunctate elevated area. Length scutellum 0.88; width 0.80. Hemelytron macropterous; clavus edged with two regular rows of punctures with an irregular (single proximally, double distally) row between them; corium with Cu paralleling claval-corial suture for its entire length; radial vein raised, other veins generally flat and inconspicuous. Membrane with four distinct veins, without cross veins. Length claval commissure 0.53; length apex clavus-apex corium 1.10; length corium 0.93. Fore femur not much more swollen than mid or hind femur, armed below with only one short stout subapical spine. All tibiae with sparse (reduced) spination. Metathoracic scent gland (Fig. 5) with ostiolar peritreme broad, strongly raised above pleural surface and evenly curving posteriorly, approaching edge of evaporative

area only on posterior half of metapleuron; apex of peritreme round and tightly coiled back upon itself. Evaporative area covering all of mesoepimeron but not extending dorsally along junction with metapleuron. Evaporative area covering ventral two-thirds of metapleuron, with dorsal margin convex.

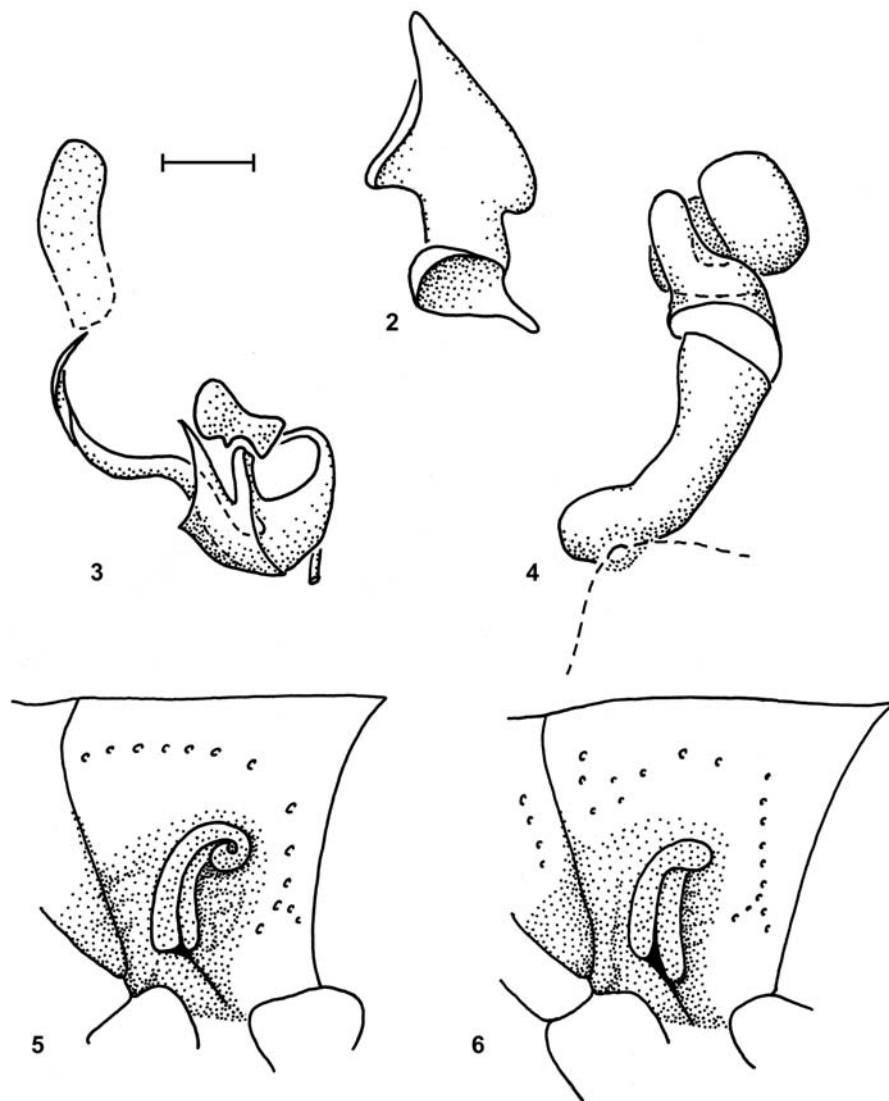
Abdomen sparsely clothed beneath with short decumbent hairs (longer hairs appear to be broken off). Male genitalia: genital capsule with small tooth along anterior margin of dorsal opening; clasper (Fig. 2) with inner and outer projections at same level. Sperm reservoir (Fig. 3) with sleeve lightly sclerotized, present only around basal one-third of vesical seminal duct; vesical seminal duct narrowing distally, modified proximally to join expanded basal portion of sleeve and broadened arcuate extension; wings spatulate; holding sclerites very faint, not fused distally. Female genitalia: spermatheca with spermathecal duct broad (Fig. 4), intermediate area far removed from bulb; flanges not apparent; base of duct broadly expanded, attached asymmetrically but directly to vaginal wall. Ostiolar peritreme of female's metathoracic scent gland (Fig. 6) not so well-developed as male's.

Holotype: ♂ [Panama, Canal Zone, Coco Solo Hospital, Light Trap, 25-VI-1975, coll. D. Engleman]. Deposited in AMNH.

Paratypes: 2 ♀♀ same data as holotype (UCMS); 1 ♀ same data as holotype except 16-V-75; 1 ♂ [Panama, nr LaCanarca, 8 viii 52, Coll. PS Blanton] (NMNH); 1 ♂ [Ft. Clayton, C.Z., IV-44, presented by E.E. Fritz, collector] (AMNH); 1 ♂, 1 ♀ [Panama, Prov. Chiriqui, Rovira, 5-VII-64, A. Bruce, 2500 ft., Mosquito Light Trap] (UCMS); 1 ♂ [Panama, dist. Chepo, Altos de Maje, 17 May 75, at lights, Stockwell - Engleman] (UCMS); 1 ♀ [Las Cumbres, Panama, 1974-V-17, 09°06'N, 79°32'W, H. Wolda, Lt. Trap] (UCMS); 1 ♀ [Panama, Colon Pr., Sta. Rita Ridge, at lights, 11-VI-77, Coll. D. Engleman] (UCMS).

Discussion

Males of *Bubaces heissi* nov.sp. are easily distinguished from other species in the genus because males of this species have the apex of the ostiolar peritreme tightly recurved, whereas the other species have an open curve, shaped like a question mark (on the right side of the body; "reversed" on the left side). It is not as easy to recognize fe-



males of *B. heissi* nov.sp., but the ostiolar peritreme has a strong bend that does not occur in females of the other species; the shape of the peritreme in females is more variable than in males.

BRAILOVSKY (1981) suggested two species groups, one containing species that are more than 5 mm in total length, have an ostiolar peritreme that ends abruptly, a long labium and spines on the hind tibiae (*B. castaneus* DISTANT and *B. convergens* BRAILOVSKY), and one containing species that are smaller, have an ostiolar peritreme that does not end abruptly, a shorter labium, and lack spines on the hind tibiae. BRAILOVSKY (1981) placed *B. enatus* BRAILOVSKY in this second group and tentatively also included *B. uhleri* DISTANT. These two species also lack hairs on the dorsum. *Bubaces heissi* nov.sp. blurs the distinction between Brailovsky's two groups because

Figs 2-6: *Bubaces heissi* nov.sp. (2) Left clasper of holotype, lateral view (hairs omitted) (3) Sperm reservoir of holotype, lateral view (4) Spermatheca of paratype (5) Metathoracic scent gland, male (holotype) (6) Metathoracic scent gland, female (paratype). Scale line = 0.10 mm for Figs 2-4, 0.25 mm for Figs 5-6.

it is 5 mm in length yet has the longer labium characteristic of the larger species in the other group (although the holotype of *B. convergens* is only 5.1 mm according to Brailovsky's description). In fact, *B. uhleri*, which should have a labium reaching only the metacoxae if Brailovsky is correct, actually has a beak that extends more than halfway onto abdominal sternum IV. *Bubaces* is in need of revision.

Nothing is known of the biology of *Bubaces heissi* nov.sp.; most specimens were collected at light. *B. uhleri* has been collected in ground litter in xeric areas, specifically under *Ficus* sp. on St. Vincent, West Indies, and in grass clumps on Jamaica (BARANOWSKI & SLATER 2005).

WOODWARD & O'DONNELL (1988) noted that both species in the Australian genus *Aristaenetus* and two species of *Neolethaeus* (*N. cantrelli* WOODWARD and *N. chessmanae* WOODWARD) also possess sexually dimorphic scent glands. Although the function of these modified male peritremes is unknown, BRAILOVSKY (1981) hypothesized a role in mating behavior because of the sexually dimorphic nature of this structure.

Equally intriguing are the two iridescent spots dorsally on the head; the ridges of these spots suggest a sound-producing function, which, because they are not sexually dimorphic, may indicate a role other than one in mating; however, if the distance between ridges varies among species, it would imply that any sound produced would also vary in frequency, perhaps in a species-specific manner.

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Zusammenfassung

Bubaces heissi nov.sp. wird aus Panama beschrieben. Eine Dorsalansicht des Holotypus und Abbildungen der männlichen und weiblichen Genitalien sowie der Stinkdrüsenöffnungen werden präsentiert.

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